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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/610,722	07/06/2000	Suresh Krishna	BRCMP005	5437

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STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.  
1100 NEW YORK AVE., N.W.  
WASHINGTON, DC 20005

EXAMINER
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COLIN, CARL G

ART UNIT	PAPER NUMBER
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2136

MAIL DATE	DELIVERY MODE
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07/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/610,722	KRISHNA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Carl Colin	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 46-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 46-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. In communications filed on 5/7/2007, applicant has amended claims 46 and 64. The following claims 46-70 are presented for examination.

1.1 Applicant's arguments, see pages 6-7, filed on 5/7/2007, with respect to the objection of claim 56 and the 112<sup>th</sup> rejection of claims 58-59 and 61-62 have been fully considered and are persuasive. The objection of claim 56 and the 112<sup>th</sup> rejection of claims 58-59 and 61-62 have been withdrawn.

2. Applicant's arguments, filed on 5/7/2007, with respect to the art rejection of claims 46-70 have been fully considered, and they are persuasive as amended. In response to applicant's request to provide documentation regarding Examiner's notice that it would have been an obvious modification to one of ordinary skill in the art to use plurality of processing engines to perform the process in parallel as to improve latency and performance, Examiner includes several prior art documents that perform parallel processing of data packets within a device. Applicant has further amended claims 46 and 64 to more particularly point out the invention. Upon further consideration, new grounds of rejection are set forth below.

### ***Double Patenting***

Art Unit: 2136

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3.1 Claims 46, 64, and the intervening claims are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 25-26 and 28-58 of copending Application No. 10/218,206. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the limitations of independent claims 46 and 64 are present in the copending application. For instance, independent claim 25 of the copending application is also directed to a plurality of security processing engines receiving security information for a plurality of packets, which could be interpreted as different packets.

Art Unit: 2136

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3.2 Claims 46, 64, and the intervening claims are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 24-44 of copending Application No. 09/610,798. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the limitations of independent claims 46 and 64 are present in the copending application. For instance, independent claims 24 and 26 of the copending application are also directed to a plurality of security processing engines receiving security information for a plurality of packets, which could be interpreted as different packets.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 64-65** are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,484,257 to **Ellis**.

As per claim 64, **Ellis** discloses a method for classifying data packets during security processing in a server (device) comprising: receiving in a gateway server at least a portion of a header for each data packet in a plurality of data packets the gateway server strips and preappends data associated with each packet in a plurality of packets that meets the recitation of determining security association information associated with each data packet in the plurality of data packets, for example (see column 8, lines 33-36 and 58-66 and fig. 5A); **Ellis** discloses providing new header information for different packets and NAT table update to a plurality of agents that meets the recitation of for each data packet in the plurality of data packets providing at least a portion of the security association information associated with the data packets to a corresponding security processing engine in a plurality of security processing engines in the device that are configured to perform authentication, encryption, or decryption functions wherein at least two of the plurality of security processing engines receive security association information for different packets (see column 8, lines 33-36 and column 8, line 58 through column 9, line 28, and fig. 5A); **Ellis** discloses wherein the plurality of security processing engines are configured to process a plurality of the data packets in parallel (see column 9, lines 8-12 and lines 29-43 and fig. 7).

Art Unit: 2136

As per claim 65, **Ellis** discloses the limitation of wherein the step of determining security association information comprises accessing a database to determine security association information (see column 6, lines 13-25).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 46-63** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,484,257 to **Ellis** in view of US Patent 6,708,273 to **Ober et al.**

As per claim 46, **Ellis** substantially discloses a server (device) comprising: a gateway server that strips and preappends data associated with each packet in a plurality of packets that meets the recitation of classification module determines security association information associated with each data packet in a plurality of data packets, for example (see column 8, lines 33-36 and 58-66 and fig. 5A); **Ellis** discloses a plurality of agents coupled to the gateway server

Art Unit: 2136

configurable to perform authentication, encryption, or decryption functions that meets the recitation of a plurality of processing engines (agents) coupled to the classification module (gateway server ) configurable to perform authentication, encryption, or decryption functions (see column 8, line 66 through column 9, line 20); and discloses providing new header information for different packets and NAT table update to a plurality of agents that meets the recitation of wherein the classification module is configured to provide at least a portion of the security association information associated with the data packets to the plurality of security processing engines wherein at least two of the plurality of security processing engines receive security association information for different packets (see column 8, lines 33-36 and column 8, line 58 through column 9, line 28, and fig. 5A); **Ellis** discloses wherein the plurality of security processing engines are configured to process a plurality of the data packets in parallel (see column 9, lines 8-12 and lines 29-43 and fig. 7). **Ellis** does not explicitly disclose the server agent and the other agents being in the same device. **Ober et al** in an analogous art teaches a cryptographic co-processor implemented on a standard chip having encryption and hash circuits and other circuits (see column 2, lines 32-65 and column 5, lines 25-48) within the same device for processing cryptographic operations in parallel (see column 6, lines 4-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the multiple agents in **Ellis** into one single device as taught by **Ober et al**. The motivation to do so is given by **Ober et al** who teaches that the plurality of encryption engines make it possible to add security to various processing applications. Hardware such as encryption and hash circuits are provided and structured to work together to provide accelerated encryption/decryption capabilities as suggested by **Ober et al** (see column 2, lines 32-65).



As per claims 47-48, the references as combined above disclose the limitation of further comprising a database including security association information wherein the database is local to the classification module, and wherein the database includes one or more entries wherein each entry defines information associated with one security association, for example (see **Ellis**, column 6, lines 14-25).

As per claim 49, the references as combined above disclose the limitation of wherein the database is located on the same chip as the classification module, for example (see **Ellis**, column 6, lines 14-25).

As per claim 50, the references as combined above disclose the claimed device of claim 46. **Ellis** further discloses IPSec protocol for implementing security association information which meets the recitation of wherein the security association information includes a sequence number an anti-replay window and a lifetime of the security association, one of ordinary skill in the art would recognize these properties as part of IPSec security protocol information (see **Ellis**, column 3, lines 15-64).

As per claim 51, the references as combined above disclose the limitation of wherein the security association information further includes an encapsulating security payload (ESP) encryption algorithm identifier and one or more ESP encryption keys, for example (see **Ellis**, column 3, lines 15-64).

As per claims 52-53, the references as combined above disclose the limitation of wherein the security association information further includes an (ESP) authentication algorithm identifier and one or more ESP authentication keys and an authentication header (AH) authentication algorithm identifier and one or more AH authentication keys, for example (see **Ellis**, column 3, lines 15-64).

As per claim 54, the references as combined above disclose the limitation of wherein the security association information includes protocol mode information, for example (see **Ellis**, column 3, lines 15-64).

As per claim 55, the references as combined above disclose wherein the database is stored in memory (see **Ellis**, column 6, lines 14-25). It is implicit that the database in the server is stored in memory.

As per claim 56, the references as combined above disclose the claimed device of claim 55 and discloses that the invention may be performed using any type of memory or data storage (see **Ellis**, column 9, lines 15-22). **Ellis** does not explicitly disclose that the memory is contact addressable memory. A contact addressable memory (CAM) is well known in the art for very fast table lookups since the data items are not accessed based on memory address or location but by analysis of content. Therefore, it would have been an obvious modification to one of ordinary skill in the art to use such memory for very fast table lookups.

As per claim 57, the references as combined above disclose the claimed device of claim 55 and further discloses wherein the memory is random-access memory (see **Kaplan**, figure 1).

As per claims 58-59 and 61, the references as combined above disclose the claimed device of claim 46. It is obvious to one of ordinary skill in the art that the invention as combined above can be implemented in different communication device such as router, firewall, or gateway device to provide routing table computations and network management (see **Ellis**, column 8, lines 33-36 and column 9, lines 29-43 and fig. 7).

As per claim 60, the references as combined above disclose the claimed device of claim 46 and further discloses wherein the device is a network communication device (see **Ellis**, column 8, lines 58-66).

As per claim 62, the references as combined above disclose the claimed device of claim 46 and further discloses wherein the device is a server (see **Ellis**, column 8, lines 58-66).

As per claim 63, the references as combined above disclose the limitation of wherein the device is a network line card, for example (see **Ober et al**, abstract).

6. **Claims 66-70** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,484,257 to **Ellis** in view of US Patent 6,760,444 to **Leung**.

As per claims 66-67, **Ellis** substantially discloses the claimed method of claim 65. **Ellis** discloses a routing table but is silent about using one or more selectors to identify a security association information entry in the database. **Leung** in an analogous art discloses wherein the step of determining security association information comprises accessing a database to determine security association information (see column 6, lines 13-28) and further comprises using one or more selectors to identify a security association information entry in the database wherein the one or more selectors include at least one of a destination IP address, a security protocol identifier and a security protocol identifier and a security parameter index, for example (see column 7, lines 25-37; column 3, lines 6-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use selectors to identify security association in the database because since a table contains one-to-many or many-to-many relationship of security information using an identifier would allow rapid retrieval of information since a secret key and other information may be associated with one identifier as suggested by **Leung**.

As per claims 68-69, the references as combined above disclose the limitation of wherein the one or more selectors include a destination IP address, a source IP address and a transport layer protocol and wherein one or more selectors further include a source port and a destination port (see **Leung**, column 7, lines 25-37 and column 9, line 52 through column 10, line 40) this is well-known in the art as included in IP header for performing IPsec processing and also

Art Unit: 2136

disclosed in RFC 2401, "Security Architecture for IP" in Applicant's disclosure. Therefore, these claims are rejected on the same rationale as the rejection of claims 66-67 above.

As per claim 70, the references as combined above disclose updating or generating new security association in a database of the server to store security association information for the Home Agent that meets the recitation of wherein the step of determining security association information comprises if no security association information exists in the database associated with the packet, generating the security association information and storing the security association information in an entry in the database, for example (see **Leung**, column 7, line 50 through column 8, line 40). Therefore, this claim is rejected on the same rationale as the rejection of claims 66-67 above.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2136

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl Colin whose telephone number is 571-272-3862. The examiner can normally be reached on Monday through Thursday, 8:00-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser G. Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


/C.C./

Carl Colin

Patent Examiner

July 19, 2007

NASSER MOAZZAMI  
SUPERVISORY PATENT EXAMINER  
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7, 23, 07